Insulating Firebricks JM

Material Type: Insulating firebricks.

Classification Temperature: 1260 °C up to 1760 °C.

Description

Thermal Ceramics produces five grades of insulating firebricks with temperatures of use ranging from 1260°C to 1760°C. Each grade is formulated to meet specific thermal and physical requirements.

JM firebricks are made from high-purity refractory clays, with graduated additions of alumina for the higher temperature products and a carefully graded organic filler which burns out during manufacture to give a uniform, controlled pore structure. Each brick is machined after production to precise tolerances on all faces.

Thermal Ceramics also produces a range of mortars to suit the different grades of brick.

Maximum Use Temperature

The maximum use temperature depends on the application. Refer to our company for advice.

Features

- **Low thermal conductivity**
  Gives good thermal insulation, enabling the use of thin-walled constructions.
- **Low heat storage**
  Due to their lightweight and low thermal conductivity, JM bricks absorb minimal heat, giving significant energy savings in cyclically-operated kilns.
- **Purity**
  The very low iron and alkali flux content confers good refractoriness and the high alumina content contributes to their stability in reducing atmosphere.
- **High hot compressive strength**
- **Precise dimensions**
  Enable the bricks to be laid more quickly with thin, uniform joints, allowing the construction of strong and stable structures.
- **Large bricks or slabs**
  They are available in sizes 230x610x64 or 76 mm and 250x640x64 mm. These can be machined into special shapes, incurring fewer sections and joints.
- **Purpose-designed packaging**
  Protects the bricks in transit (in cartons containing 4 to 25 item, depending on shape) and facilitates on-site handling.

Applications

Due to their light weights, low heat storage and high temperature resistance, recommended for use as a primary hot face refractory lining or as back-up insulation behind other refractories in furnaces, kilns, flues, refining vessels and heaters, regenerators, gas producers and main, soaking pits, stress relieving furnaces, reactor chambers and similar high temperature industrial equipment.

Special Shapes

JM insulating firebricks are available in pre-machined special shapes and/or special dimensions may be formed by mortaring two or more JM slabs together.

Insulating Firebricks JM

Main Properties		JM 23	JM 26	JM 28	JM 30	JM 32
• ISO 2245 Classification		125-0.5-L	140-0.8-L	150-0.9-L	160-1.0-L	170-1.2-L
• Classification Temperature	°C	1260	1430	1540	1650	1760
Properties Measured at Ambient Conditions (23°C/50% RH)						
• Density (ASTM C -134-84)	kg/m³	480	800	890	1020	1250
• Modulus of Rupture (ASTM C-93-84)	Mpa	1.0	1.5	1.8	2.0	2.1
• Cold Crushing Strength (ASTM C-93-84)	Mpa	1.2	1.6	2.1	2.1	3.5
High temperature performance						
• Permanent linear change (ASTM C-210) after 24 hours soaking at temperatures						
1230°C	%	-0.2	-	-	-	-
1400°C	%	-	-0.2	-	-	-
1510°C	%	-	-	-0.4	-	-
1620°C	%	-	-	-	- 0.8	-
1730°C	%	-	-	-	-	+0.6
• Reversible linear thermal expansion, % (max.)	%	0.5	0.7	0.8	0.9	1.1
• Hot load strength % deformation after 90 min (ASTM C-16)						
0.034 MPa (5 psi) at 1100 °C	%	0.1	-	-	-	-
0.069 MPa (10psi) at 1260 °C	%	-	0.2	0.1	-	-
0.069 MPa (10psi) at 1320 °C	%	-	-	0.2	0.1	-
0.069 MPa (10psi) at 1370 °C	%	-	-	-	0.5	0.2
• Thermal Conductivity (ASTM C-182-83)						
400 °C	W/m.K	0.12	0.25	0.30	0.38	0.49
600 °C	W/m.K	0.14	0.27	0.32	0.39	0.50
800 °C	W/m.K	0.17	0.30	0.34	0.40	0.51
1000 °C	W/m.K	0.19	0.33	0.36	0.41	0.53
1200 °C	W/m.K	-	0.35	0.38	0.42	0.56
1400 °C	W/m.K	-	-	-	-	0.60
• Specific Heat at 1000 °C	kJ/kg.K	1.05	1.10	1.10	1.10	1.10
Chemical Composition (tr=trace)						
Al_2O_3	%	37.0	58.0	67.1	73.4	77.0
SiO_2	%	44.4	39.1	31.0	25.1	21.5
Fe_2O_3	%	0.7	0.7	0.6	0.5	0.3
TiO_2	%	1.2	0.1	0.1	0.1	tr
CaO	%	15.2	0.1	0.1	tr	tr
MgO	%	0.3	0.2	0.1	tr	0.1
$Na_2O + K_2O$	%	1.1	1.7	0.9	0.9	0.9

Standard Dimensions and Packaging

Width (mm)	Brick quantity in one carton (pcs)														Thickness (mm)
	Length (mm)														
	110	114	124	152	165	172	178	187	220	230	250	305	610	640	
220	25	-	-	-	16	-	-	-	12	-	-	-	-	-	60
230	-	25	-	20	-	20	16	-	-	15	-	10	5	-	64
230	-	20	-	16	-	16	13	-	-	12	-	8	4	-	76
250	-	-	25	-	-	-	-	16	-	-	12	-	-	5	64

The values given herein are typical average values obtained in accordance with standard test methods and subject to normal manufacturing variations. They are supplied as technical data and may change without notice. Contact our company to obtain detailed information.

MORGAN CERAMICS MIDDLE EAST FZE
P.O. Box 16426 # 403/404 Business Centre 4
RAK Free Trade Zone, Ras Al Khaimah
United Arab Emirates
Tel : +971 (7) 204 18 70
Fax : +971 (7) 204 18 75
E-mail : middleeast.tc@morganplc.com

Local Contact

AKM METALURJİ

www.akm.com.tr

AKM METALURJİ SANAYİ
TEMSİLCİLİK & DIŞ TİC.LTD.ŞTİ.
İTOSB, İstanbul Tuzla Organize Sanayi Bölgesi
2.Cad. No:13 Tepeören Tuzla 34959 İstanbul
Tel : +90 216 467 31 40
Fax : +90 216 467 31 45
E-mail : akm@akm.com.tr